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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,567	03/17/2004	Norio Yoshikawa	008312-0308796	1900

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EXAMINER

KAYRISH, MATTHEW

ART UNIT	PAPER NUMBER
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2627

DATE MAILED: 06/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/801,567	YOSHIKAWA, NORIO	
	Examiner	Art Unit	
	Matthew G. Kayrish	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2-7, 9-13 and 15-21 rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. The claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1 and 2 rejected under 35 U.S.C. 102(b) as being anticipated by Butler et al (US Patent Number 6529345).

Regarding claim 1, Butler et al disclose:

A disc device comprising;

A disc (figure 2, item 118);

A driving section configured to support and rotate the disc (column 1, lines 18-20);

A head configured to record and reproduce information onto and from the disc (column 1, lines 24-27); and

A case containing the disc, the driving section and the head, the case including:

A case main unit (figure 2, item 123) having an opening (disc [118], VCM [112], and actuator arm [122] are supported within the opening); and

A cover secured to the case main unit (figure 2, item 124), closing the opening and opposing the disc (see figure 2), and the cover including:

A first arcuate stepped portion (figure 2, item 132) opposing an outer periphery of the disc;

A second arcuate stepped portion (figure 2, lower arcuate step just inside of peripheral bead [132], but along outside of depression [126]) located closer to the disc than the first stepped portion (see figure 2); and

A second arcuate stepped portion (figure 2, depression [126]) located closer to the disc than the second stepped portion.

Regarding claim 2, Butler et al disclose:

The disc device according to claim 1, wherein the first to third stepped portions concentrically extend through at least 180° away from a movement route of the head, opposing the disc (column 3, lines 46-57).

Regarding claim 3, Butler et al disclose:

The disc device according to claim 2, wherein the second stepped portion is provided inside the first stepped portion (see figure 2), and the third stepped portion is included in the second stepped portion (see figure 2).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Butler et al, in view of Takekado (Japanese Patent Number JP 2003085938 A).

Regarding claim 4, Butler et al fails to disclose:

The disc device according to claim 3, wherein the a fourth substantially circular stepped portion is provided inside the second stepped portion, the fourth stepped portion opposing a hub used to attach the disc to the driving section.

Takekado discloses:

The disc device according to claim 3, wherein the a fourth substantially circular stepped portion (figure 1, labeled item C) is provided inside the second stepped portion, the fourth stepped portion opposing a hub used to attach the disc to the driving section.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an elevated substantially circular portion in the center region of the cover, as taught by Takekado, because this will help to avoid scratching of the hub and the cover when rotating the disc.

Regarding claim 5, Butler et al fails to disclose:

The disc device according to claim 4, wherein the fourth stepped portion has substantially a same height as the first stepped portion.

Takekado discloses:

The disc device according to claim 4, wherein the fourth stepped portion has substantially a same height as the first stepped portion (figure 1, substantially circular portion C is the same height as first step portion [outermost elevated portions between items 44]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to create the center portion of the cover to be the same height of the first stepped portion, as taught by Takekado, because this will help to stabilize the airflow along the inner and outer perimeter of the stepped portion of the case, therefore stabilizing vibrations.

Regarding claims 6, 7, 11, 12, 17 and 18, Butler fails to specifically disclose:

The disc device according to claim 3, wherein a ratio of a height difference between the first and second stepped portions to a height difference between the first and third stepped portions falls within a range of 0.3 to 0.85.

The disc device according to claim 3, wherein a ratio of a radial width of the second stepped portion to a radial width of the third stepped portion falls within a range of 0.3 to 0.9.

However, it would have been obvious, as a matter of design choice to one of ordinary skill in the art at the time the invention was made, in the course of routine engineering optimization/experimentation to design the height differences within these ranges.

Moreover, absent a showing of criticality, i.e., unobvious or unexpected results, the relationships set forth in claims 6 and 7 are considered to be within the level of ordinary skill in the art.

It furthermore has been held in such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range(s); see *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Regarding claim 8, Butler et al disclose everything repeated from claim 1, however, Butler et al fail to specifically disclose:

A plurality of fixing sections used to fix the cover to the case main unit; and

At least one groove radially extending from a portion of the cover near one of the fixing sections toward a central portion of the cover opposing a center of the disc.

Takekado discloses:

A plurality of fixing sections used to fix the cover to the case main unit (figure 3, item 40); and

At least one groove radially extending from a portion of the cover near one of the fixing sections toward a central portion of the cover opposing a center of the disc (figure 3, item 44).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to create the cover with fixing portions and grooves, as taught by Takekado, because these fixing portions and grooves will make the design more rigid and less susceptible to vibrations.

Claim 9 is rejected for the same reason as claim 2.

Claim 10 is rejected for the same reason as claim 3.

Regarding claim 13, Butler fails to specifically disclose:

The disc device according to claim 8, wherein the groove is formed at substantially a same level as the second stepped portion.

Takekado discloses:

The disc device according to claim 8, wherein the groove is formed at substantially a same level as the second stepped portion (see figure 3)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to create the grooves on the same level as the second stepped portion, as taught by Takekado, because this improve on the rigidness to help prevent vibrations of the disc.

Regarding claim 14, Butler et al disclose everything repeated from claim 1, however, Butler et al fail to specifically disclose:

A stepped control portion located closer to the disc than the third stepped portion, the stepped control portion suppressing vibration of the outer periphery of the disc in a direction parallel to a surface of the disc.

Takekado discloses:

A stepped control portion located closer to the disc than the third stepped portion, the stepped control portion suppressing vibration of the outer periphery of the disc in a direction parallel to a surface of the disc (figure 1, corner slots [44] act as stepped control portions).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the cover of Butler et al with control stepped portions for suppressing the vibrations on the outer periphery of the disc.

Claim 15 is rejected for the same reason as claim 2.

Claim 16 is rejected for the same reason as claim 3.

7. Claims 20 and 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Butler et al, in view of Takekado, in further view of Hirasaka et al (US Publication Number 2002/0044375).

Regarding claim 20, Butler et al, in view of Takekado fail to disclose:

The disc device according to claim 14, wherein the stepped control portion is formed arcuate along an outer periphery of the first stepped portion.

Hirasaka et al. disclose:

The disc device according to claim 14, wherein the stepped control portion is formed arcuate along an outer periphery of the first stepped portion (figure 1, periphery along disc near arrow 22 is stepped closer to disc than the rest of the cover).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to create a stepped portion along the periphery of a rotating disc, as taught by Hirasaka et al. as this would help suppress vibrations along the outer periphery of a disc. Furthermore, this practice is well known in the art to suppress vibrations along the outer periphery of a rotating disc.

Regarding claim 21, Butler et al, in view of Takekado fail to disclose:

The disc device according to claim 14, wherein the stepped control portion diametrically opposes a holding mechanism with the disc interposed therebetween, the holding mechanism being used to hold the head in a retracted position deviated from a position in which the head is positioned above the disc.

Hirasaka et al disclose:

The disc device according to claim 14, wherein the stepped control portion diametrically opposes a holding mechanism with the disc interposed therebetween (figure 2, holding portion indicated by f8, is diametrically opposed to the stepped control portion located near f4), the holding mechanism being used to hold the head in a retracted position deviated from a position in which the head is positioned above the disc.

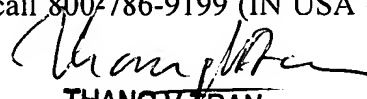
Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to create the stepped control portion on the opposite side of the disc as

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the actuator arm, as taught by Hirasaka et al, because the actuator arm needs to rotate without rotation being limited by the stepped portion.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew G. Kayrish whose telephone number is 571-272-4220. The examiner can normally be reached on 8am - 5pm M-F.
9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Matthew G. Kayrish


THANG V. TRAN
PRIMARY EXAMINER
5/23/2006

MK